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Cost and Management

The official journal of

The Society of Industrial and Cost Accountants of Canada

September, 1949

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IN MODERN BUSINESS MACHINES

COST *and* MANAGEMENT

VOL. XXIII SEPTEMBER No. 8

COSTS AND THE NEW DEPRECIATION PRACTICE ANNOUNCED BY THE BUDGET

by George Moller 253

Mr. Moller graduated from the University of Prague in Law and Political Science and obtained the degree Doctor Juris. For some time he was Secretary to the Management of the Bohemian Union Bank, and represented this institution in the management of several large industrial corporations. After coming to Canada, he joined the staff of Geo. A. Touche and Co., and in 1945 was admitted to membership in the Institute of Chartered Accountants of Ontario. Mr. Moller recently joined the firm of Robertson-Irwin Co. Ltd., as assistant controller, and is a member of the Hamilton Chapter of S.I.C.A.

THE FOREMAN'S PART IN COST REDUCTION

by A. Melbourne Patience 257

Mr. Patience is Toronto born, a varsity graduate in Electrical Engineering. His business career has included engineering and managerial positions with some of the major radio firms of the country, and at present he is General Superintendent, Radio Manufacturing Division, R.C.A. Victor Co. Ltd., Montreal.

INTERNAL CONTROL THROUGH SYSTEM DESIGN

by E. P. Priebe 268

Mr. Priebe is a graduate of the University of Illinois and has been connected with the Skelly Oil Co. and subsidiaries for almost sixteen years. At present he is Internal Auditor for the parent company. Mr. Priebe has appeared before many accounting groups, and has written many articles dealing with accounting, some of which have been published in business magazines. He is a C.P.A., and is a member of the National Association of Cost Accountants, through whose kind permission, his article appears in Cost and Management.

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SOCIETY NOTES

OUR NEW COVER

For the first time in 22 years, Cost and Management has taken on a distinctively new appearance with this issue. The fact that we have adhered to the old design for so long a period, attests to the wisdom of those who were responsible for its creation. But change in itself is good. It attracts attention and creates interest, and only with change can there be progress.

> Particular attention is drawn to the fact, that the names of the Officers of the Dominion and Provincial Societies and of the Chapters do not appear on the inside front cover, and the inside and outside back cover, as heretofore. Instead, a loose leaf pamphlet will be inserted in the next issue of Cost & Management containing this information, together with the time and place of meeting of each Chapter. This pamphlet can be filed for ready reference, and thus avoid the necessity of using valuable space in the magazine for repeating this information each month.

It is the hope of the Publications Committee that the changes which have been made reflect some improvement, but the fact remains that the real value of the magazine is in its contents. Every effort will be exercised to publish articles that will make the magazine worthy of the Society, but herein there must be dependence upon the membership. The more material that is contributed, the greater is the selection which can be made. The magazine is one channel through which every member throughout the whole organization may make a lasting contribution, whether it be in the form of articles, brief items of interest to industrial accountants, or suggestions for further improvement in the magazine.

SASKATOON CHAPTER ORGANIZED

When most of the chapters had held their last meeting of the season, a group of accountants met in Saskatoon to organize the Saskatoon Chapter of the Society of Industrial and Cost Accountants of Saskatchewan. This meeting was held on May 30 in the Board Room of the Saskatchewan Federated Co-Operatives. A board of directors was elected and plans were made to hold the first regular meeting of the members on June 20. (A report of this meeting is covered under chapter notes).

At a subsequent meeting of the board of directors, the executive and committee chairmen were elected as follows: Chairman, E. T. Mowbrey; Vice-Chairman, H. Butler; Secretary, A. J. Dummer; Membership Committee, C. P. DeRoche, C.A.; Educational Committee, Dean J. H. Thompson, B.ACC., F.C.A.; Student Committee, G. E. Harris.

We are very happy to welcome this new chapter into our Society, and we know that its membership will make a vital contribution to the work of the Saskatchewan Society in particular and the Canadian Society as a whole. We may well expect to hear from this new chapter frequently.

NOTES ON INDUSTRIAL LEGISLATION AVAILABLE TO MEMBERS

The course in Industrial Legislation has now been completed to conform to the Syllabus as laid down by the Co-Ordinating Educational Committee. While the course has been prepared for use by the students, it is felt that this material contains much of interest to all members and it is, in effect, a condensation of legislation which is directly related to the work of the Industrial and Cost Accountant. The present course has been prepared particularly for use in the Province of Ontario, but is being amended by each Provincial Society to conform to their own particular requirements.

The following is the subject matter covered:

1. Mercantile Law in Canada
2. Contracts
3. Negotiable Instruments
4. Banking and Interest
5. Partnerships
6. Companies
7. Master & Servant
8. Principal & Agent
9. Sale of Goods
10. Bills of Sale & Chattel Mortgages
11. Trade Unions in Canada
12. Labour Relations Law in Ontario
13. Collective Labour Agreements
14. The Factory Act
15. Hours of Work, Vacations with Pay & Minimum Wages
16. Industrial Standards
17. Fair Wages
18. Apprenticeship Control
19. Workmen's Compensation Act
20. Combines & Unfair Competition
21. Patents, Copyrights & Trade Marks
22. Unemployment Insurance
23. Bankruptcy (Supplementary to the course)

The entire set of lessons consists of 105 pages of notes, and are available to members at a cost of $3.00 by writing to the Secretary-Manager.

New Members

Fort William - Port Arthur

N. R. Wilson, N. R. Wilson Motors Ltd., Port Arthur.
M. Cochran, Hammermill Paper Company, Port Arthur.
H. V. Passmore, Mutual Life of Canada, Fort William.
D. A. Clark, Nipigon Lake Timber Co. Ltd., Port Arthur.
T. G. Porter, McNulty's Ltd., Port Arthur.
H. E. Leece, Marshall Wells Co. Ltd., Port Arthur.
C. Southern, Abitibi Power & Paper Co., Port Arthur.

Hamilton

T. G. Furness, 396 Main St. E.
W. W. Crawford, Massey-Harris Co. Ltd., Brantford.

Kitchener

W. K. Dewar, Canadian General-Tower Ltd., Galt.

London

L. T. Barclay, C. Richardson & Co. Ltd., St. Mary's.
C. Kenyon, Massey-Harris Co. Ltd., Woodstock.

New Westminster

G. A. S. Mylet, 627-6th Street.

Niagara

W. G. Cooney, Atlas Steels Ltd., Welland.

Quebec

M. Nadeau, 862-8th Avenue.
R. Noel, 1684-4th Avenue.
M. Page, Charlesbourg ouest.
J. Vien, New Carlisle.
J. B. Giroux, Donohue Bros. Ltd., La Malbaie.

Toronto

W. W. Stroud, G. H. Wood & Co.
B. J. Wigglesworth, Canadian Bearings Ltd.
A. L. Clark, Massey-Harris Co. Ltd.
W. R. Miller, Massey-Harris Co. Ltd.
J. T. F. Orr, Toronto Elevators Ltd.
R. F. J. Brazier, The Gurney Foundry Co. Ltd.
R. T. Hann, Eastern Steel Products Ltd.

Non-Resident B.C. Society

E. S. Somers, Oliver.

Personals

Congratulations to Jack Sutherland, popular director of the Hamilton Chapter, who has recently been appointed chief Cost Accountant of the Canadian Westinghouse Co. Ltd.

Mr. Sutherland succeeds the late Mr. F. E. Kershaw who was also a member of the Hamilton Chapter.

Chapter Notes

HAMILTON CHAPTER HOLDS GOLF TOURNAMENT AND GET-TOGETHER

The old adage that "it's always good weather, when good friends get together", held true on Friday, August 26th, when members of the Hamilton Chapter gathered at the Hamilton Golf and Country Club to match niblicks. Twenty-five members and guests teed off in quest of the W. H. Furneaux and Stan Stott trophies and sundry other prizes. At a dinner held in the evening and attended by both golfers and 19th holers each one present was introduced by Chairman Roy Spence, aided and abetted by well-known local members. The chairman then called upon Lloyd Simenton who welcomed one and all and thanked those who had assisted in making the outing a success. Harold Llewellin then took over and distributed the prizes. R. Ott, of Brantford, won low gross and possession of the W. H. Furneaux trophy for the next year, while Paul McKenzie took low net and the Stan Scott trophy, for his efforts. After awards for hidden holes, high gross, and visitors low had been given out, draws were conducted and each person present took home a gift. The evening concluded with cards and the usual sociability.

Much of the credit for the success of the outing must be given to Lloyd Simenton, chairman of the Special Events Committee and to the various firms who so kindly donated prizes.

SASKATOON CHAPTER

The first regular meeting of the Saskatoon Chapter was held in the Board Room of the Federated Co-Operatives on June 20th. Among the items of business discussed was the matter of the meeting nights and it was agreed that the Chapter should meet on the third Monday of each month and that the next meeting would be held on September 19th.

The highlight of the meeting was an address by Dean Thompson on the subject "Principles of Administrative Organization", followed by a lively discussion. It was agreed that all talks should be reproduced for distribution among the members, which will be made possible by A. R. MacDonald and L. F. Cutts who will supply the necessary material and facilities.

ASSISTANT COST ACCOUNTANT

A steel fabricating company in Hamilton has an opportunity for an ambitious man with a genuine interest in cost work. Related experiences and advanced RIA training essential. Future advancement assured for the right man. State when available. Apply Box No. 16, Cost & Management.

Current Literature Digest

Retail Inventory Method Adapted to Appliance Merchandising in a Public Utility — by Frank D. McAuley.

Costing Replacement Parts Sales by Modified Retail Inventory Method — by Warner V. Stoughton.

Use of the Retail Inventory Method to Cost Sales and Value Finished Goods of a Pharmaceutical Manufacturer — by Raymond J. Terkhorn.

N.A.C.A. Bulletin, Volume XXX, No. 19, Section 1, June 1, 1949.

The retail inventory method is one whereby true and actual cumulative purchases are apportioned with reasonable accuracy to Inventory and Cost of Goods Sold account.

Every purchase is priced both at selling price and at cost. Opening inventories plus purchases, both priced at cost, are compared on a % basis with the same inventories plus purchases priced at retail. Then from the total "available" merchandise priced at retail is deducted sales for the period (leaving net inventory at retail). The resultant figure, when multiplied by the % derived as described above, will produce the value of the same inventory at cost. The reciprocal of the cost % will give the cost of goods sold value if applied to the sales figure.

Mark-ups to adjust residual inventories to current retail values are taken into account in the computation of the cost %. Mark-downs in the same regard are included in arriving at net inventory at retail, but are not included in the relative % of cost price to retail. Mr. McAuley claims that this results in the inventory expressing for all intents and purposes values at the lower of cost or market.

The key to this system's success it is claimed lies in groups of articles, similar in nature, and closely comparative in price and mark-up percentage, being classed together. It is the unanimous opinion of all the authors that a really great saving in clerical time results when this system is used. This appears manifest when it is considered that inventory valuation and cost of sales is secured on a % of retail dollars, rather than on the basis of unit costing.

All authors agree on the system's limitations and disadvantages when inappropriately applied. The particular applications described are wholly implied or stated in the titles of the articles.

The difficulty of quantity control in many cases is not so great apparently as might be imagined. For the Public Utility business Mr. McAuley states that serial numbers are attached to the physical merchandise. A full accounting seems possible on that basis alone. Further, quantities secured from physical stock-taking are priced at retail. Since book inventories are also recorded at retail, discrepancies show up quickly.

It would seem that many manufacturers might profitably apply this technique to the control of merchandise or parts, which ordinarily are stubbornly resistant to normal, closely accurate and economical means of inventory accounting, but which lend themselves to treatment under this method.

CURRENT LITERATURE DIGEST

The New Look in Balance Sheets — by R. K. Mautz — The Controller, June 1949.

The currently frequent if not wholly prevalent effort toward simplifying the Balance Sheet is questioned by the author. The new style Balance Sheet is described thus:—

	Current Assets
less	Current Liabilities
	Working Capital
plus	Other Assets
less	Other Liabilities
	Net Assets

A second section of the statement shows the capital stock and surplus (or "re-invested earnings"), the combined amount of which is to correspond to "Net Assets" shown above.

Mr. Mautz questions the "New Look" on these grounds:—

(1) Is it proper to deduct current liabilities, at amounts to be paid, from current assets which are not uniformly stated at amounts to be realized?

(2) Is the amount of working capital significant enough to warrant the prominence with which it is displayed in the new statement and, further, resulting as it does from the computation described in (1), is the amount calculated correctly?

(3) Is it desirable to accept a balance sheet form which adopts a narrow view of the corporation as belonging solely to the stockholders?

(4) Does the new form actually lead to a more understandable presentation of the corporate properties, liabilities, and capital stock interests?

He suggests that possibly the answer to a more understandable statement of financial condition is not in a new form but rather in:—

(1) Increased use of textual comment to explain and supplement the financial statements.

(2) The use of statements, schedules, and analyses which are not required to balance debits against credits as in a trial balance.

Preparation of Company Annual Reports — American Management Association Research Report No. 10.

Every page of this booklet (and there are 104 of them) is replete with constructive suggestions for making Financial Statements more readable and more informative. Attention is drawn to the diverse elements interested in Financial Statements — Management, Stockholders, Employees, Labor Unions, Investment Houses, Banks, Investing Public, etc. Suggested improvements in form or supplemental data are directed towards better meeting this diversity of interest.

This article could easily contribute much towards a better understanding of business problems, methods and responsibilities on the part of the interested elements mentioned — if its suggestions were widely

implemented. New light would be shed on terms such as Profits, Reserves, Dividends, Surplus and Inventory valuations.

OTHER ARTICLES OF INTEREST TO INDUSTRIAL AND COST ACCOUNTANTS

Use of Replacement Figures in Cost Accounting for Pricing and Income Statement Purposes, by John W. McEachern, C.P.A.
The Journal of Accountancy, July, '49.

The Functions of the Accountant and the Internal Auditor, by E. H. Davison, C.A.

Periodical Physical Inventory of an Oil Company's Properties and Equipment, by Harry B. Drennan.
The Internal Auditor, June, '49.

Internal Audit of Cost Functions—Procedures for Auditing Standard Costs, by Earl A. Green.

Continuing Expense Estimates and Business Interruption Insurance Coverage, by John R. Flynn.

Job Factors for the Evaluation of Clerical and Administrative Positions, by John B. Hughes.
N.A.C.A. Bulletin, Aug. '49.

Controlling Breakeven Points, by Fred V. Gardner.
Factory Management & Maintenance, July '49.

Addresses of Publications

American Management Association, 330 West 42nd Street, New York 18, N.Y.

Controller, 1 East 42nd St., New York 17, N.Y.

Factory Management and Maintenance, 330 West 42nd St., New York 18, N.Y.

Internal Auditor, 120 Liberty St., New York 6, N.Y.

Journal of Accountancy, 270 Madison Ave., New York 16, N.Y.

N.A.C.A. Bulletin, 385 Madison Ave., New York 17, N.Y.

NAMES OMITTED FROM LIST OF SUCCESSFUL CANDIDATES

In announcing the examination results in the last issue of Cost and Management a number of the successful candidates in the industrial legislation examination in the Montreal, St. Maurice Valley and Eastern Townships chapters were inadvertently omitted.

The following candidates should have been listed as having passed this examination:

Anderson, R. V.
Beeman, D. S.
Boulet, R.
Brown, N. R.
Carmel, A.
Coyle, D. M.
Drapeau, J.
Duverger, G.
Ellison, L.
Epstein, L. E.
Field, J.
Greer, F. J.
Hodgson, F. R.
Jackson, L. E. F.
Jones, W. G. R.
Larocque, C. A.
Mackinnon, W. A.
Magyar, L.
Martin, G.
McKenzie, A. W.
Morris, S.
Perras, H. R. R.
Rosoph, S.
Sears, H. K.
Shutt, D. G.
Stanfield, A.
Walker, J. R.
Wozny, J.

Costs and the New Depreciation Practice Announced by the Budget

By GEORGE MOLLER, D.juris, C.A.

Assistant Comptroller, Robertson-Irwin Co. Ltd.

The election is over and there is no doubt that the Government will implement the budget announced in the old Parliament by the Minister of Finance. For the cost accountant, the change in depreciation practice which the Minister of National Revenue is preparing, should be of particular importance.

It may be useful to quote the definition of depreciation from George O. May's book **Financial Accounting*** as an introduction to the following treatise:

> "Depreciation, as applied to fixed property, is now a word of art, used to describe broadly the cost or expense **due to all the factors which cause the ultimate retirement of property** in so far as that cost is not included in current maintenance. Annual depreciation charges are an amortization of cost over useful life; they are not an attempt to measure a change in value; they have nothing to do with replacement."

Under the interpretation which the Tax Department gave heretofore to the term "depreciation", the allowance was restricted to a much narrower meaning, excluding obsolescence and other unexpected factors affecting the asset's useful life.

The important and far-reaching change in depreciation practice has not been proposed in the form of a budget resolution. The technical reason for this procedure lies in section 11(1)(a) of the new Income Tax Act which states that "such part of the capital cost to the taxpayer of property . . . if any, may be deducted in computing taxable income **as is allowed by regulation.**" Under the Income Tax Act such regulations are to be made by the Governor-in-Council. Thus this change does not require an act of Parliament and will not be codified with other proposed changes in the Act. Although the exact meaning of the proposed change is not yet known, certain principles have been divulged by the Minister of Finance.

Under the practice followed by the Department up to now the straight line method of depreciation (i.e. allowing the same percentage of the original cost every year) was the method accepted practically exclusively. With the exception of automotive vehicles and the disallowance of the excess of sales price of assets subject to double depreciation over original cost less normal depreciation, any profit or loss resulting from the disposal of depreciated fixed assets, did not affect the taxable income of the taxpayer.

*New York: The MacMillan Company (1943); p. 118.

In future, depreciation will be based on the diminishing balance principle. From the Minister's statement it appears that substantially higher rates will probably be applied than the Department has allowed heretofore. An adjustment will take place when an asset is disposed of, which should have the effect of giving the taxpayer an allowance for the full actual decrease in value between acquisition cost and disposal proceeds. On the other hand, the taxpayer will probably be taxed for any depreciation charge he may have deducted from his taxable income during the period of his ownership of the particular asset which is in excess of actual total need for depreciation, as determined by the final disposal. The following schedule will illustrate the difference between depreciation charges under the previous method and under the new procedure, as outlined by the Minister:

COMPARATIVE SCHEDULE OF DEPRECIATION CHARGES
(in round dollars)

ASSET COST $1,000

Year	Straight line		Diminishing Balance Method					
	METHOD							
	10%	Bal. 1,000	10%	Bal. 1,000	15%	Bal. 1,000	20%	Bal. 1,000
1	100	900	100	900	150	850	200	800
2	100	800	90	810	128	722	160	640
3	100	700	81	729	108	614	128	512
4	100	600	73	656	92	522	102	410
5	100	500	66	590	78	444	82	328
6	100	400	59	531	67	377	66	262
7	100	300	53	478	56	321	52	210
8	100	200	48	430	48	273	42	168
9	100	100	43	387	41	232	34	134
10	100	Nil	39	348	35	197	27	107
11			35	313	30	167	21	86
12			31	etc.	25	etc.	17	etc.

Assumption—The asset is sold at the end of the 5th year for

$1,000	$500 Capital gain	$410 gain subject to taxation (see note)	$556	$672
$ 500	——	$ 90 loss to be allowed for tax purposes	$ 56 gain	$172 gain subject to taxation (see note)
$ 250	$250 Capital loss	$340 loss to be allowed for tax purposes	$194 loss	$ 78 loss
Scrapped (no value)	$500 Capital loss	$590 loss to be allowed for tax purposes	$444 loss	$328 loss

Note: The Minister of Finance did not make it clear how the gains from depreciation in excess of requirement will be subjected to taxation. It is possible that the amount realized will be credited in total to the Reserve Depreciation which in this case would be treated as a cumulative reserve aggregate.

From the above example it is evident that even the increased rate of depreciation produces under the diminishing balance method after the third year at 15% and after the fourth year at 20% a smaller charge in dollars and cents than under the straight line method. This is contrary to the demand raised by big industry in England and in the United States for tax relief under the title of depreciation, having regard to present replacement values far in excess of original cost. The diminishing base principle causes larger amounts to be written off in the first years of operation after acquisition of a fixed asset. The effect is similar to the procedure recently established by many industrial corporations in the United States which accelerate depreciation in the first years, reasoning that the price of assets acquired in periods of high prices must as far as possible be recouped before a decisive change in the economic cycle takes place, in other words, the new equipment should pay for itself in the first years after acquisition.

The new procedure was apparently influenced by the depreciation practice established in England by the Income Tax Act, 1945. Under this regulation an initial allowance is granted in the first year which is followed by annual allowances on a diminishing balance basis for plant and equipment, and on the straight line method for buildings (2%) and patents (over 17 years or remaining life). The whole procedure is governed by the principle that the taxpayer is entitled to charge off the full cost of a capital asset over the period of its useful life. This means that only when the asset is scrapped or disposed of, will the required total of depreciation charges be known, as illustrated by the foregoing example.

In Canada, the calculation of the adjustment at the time of disposal will apparently be complicated by the proviso, announced by the Minister, that "the adjustment will be limited to the written down value at the end of 1948 regardless of the price realized on disposal of assets." In short, the so-called recapture provision shall not have any retroactive effect. It remains to be seen, how double depreciation and motor vehicles will be treated under the new procedure.

There can be no question that the announced changes will have the advantageous effect of allowing for obsolescence not covered by depreciation charges under the old system. On the other hand, the taxable income of an enterprise may be materially affected by the result of the recapture provision in the year of disposal or scrapping of a big asset. The management will, of course, have a certain measure of discretion as to the year in which the recapture provision should take effect, by timing the disposal accordingly. Much will also depend on the rates the regulation will set for the various classes of depreciable fixed assets and whether the order-in-council will grant an initial allowance in the first year analogous to the English regulation.

It is to be hoped that the forthcoming regulation will follow the English practice which does not require the taxpayer to charge depreciation for tax purposes in loss years. The change should also have the effect of breaking with the rule heretofore observed that no deduction will be allowed for depreciation unless the taxpayer actually sets up the provision on his books of account. Under the new principles this rule loses its last vestige of justification, since the Department will in any case grant the taxpayer the full difference between acquisition and disposal price in the end.

As long as the taxpayer fulfills the requirement of consistency (section 14 (1) The Income Tax Act), he should be given, within certain limits, discretion in adopting rates and classifying assets for depreciation purposes.

The cost accountant will not view any change in depreciation methods too favourably, because the change disturbs the feature of comparability in his figures and may even disturb his standard costs, if those standards have been set on the basis of straight line method depreciation charges.

The cost accountant should strive for liberation from the yoke of depreciation charges imposed on him by the Tax Department which is governed by considerations far distant from the purpose of determining costs as accurately as possible. For cost purposes, depreciation especially of machines, should be based exclusively on a unit basis and not on a time basis. The considerations which lead to the management's decision to acquire a new machine, are as a rule made from the viewpoint, how the machine will pay for its costs or in other words, be able to return the outlay for its acquisition out of the revenue from its products. There will be a minimum quantity of units determined which could reasonably bear the cost of the machine. If the actual production exceeds this miniumum, a favourable variance results. If the minimum number can not be sold, the management has made a wrong decision and the unabsorbed balance of the cost of the machine should be written off as overhead like any expense not directly attributable to a particular product.

The foregoing is merely stated as an illustration of the difference between depreciation for the cost accountant and that of the financial accountant who is principally governed by tax and other considerations of an expediency character.

It is hoped therefore, that the regulations now in preparation will permit the taxpayer to claim for tax purposes depreciation up to the maximum rate set by the Department, although such claim has not been incorporated in the financial accounts. The enterprise should not be forced to use for costing purposes depreciation charges set by tax regulations, although the costs arrived at, using other than taxwise depreciation charges, may be reflected in the inventory valuation of the taxpayer.

The Foreman's Part in Cost Reduction

by A. M. PATIENCE, B.A.Sc.,
Superintendent, Radio Division, R.C.A. Victor Company

COST REDUCTION IS STILL OUR No. 1 JOB

Except for the war years, cutting costs has always been management's most important job. It still is. The very survival of many concerns in this year 1949 depends upon their ability to hammer down costs.

The basic reason why lower costs are of crucial importance is plain. Demand and supply, over the economy as a whole, are coming more nearly into balance than at any time since the close of the war. The transition from sellers' to buyers' markets has been completed in all but a few lines like steel and automobiles. And reports show that even steel and automobile customers may be calling the tune before long.

So beginning right now the going will get tougher and tougher. The plant whose break-even point may once have been at 50 or 60 per cent of capacity may find it has to operate at, say, 80 per cent of capacity merely to stay in the black, let alone make a profit.

The job of reducing costs is never finished. It is a continuing program. No matter how low costs may be, no matter how much costs have already been reduced, further reductions are always theoretically possible. It is therefore management's responsibility — to its employees, to its customers, and to itself — to organize a formal and continuing cost-reduction program.

It is also management's responsibility to recognize the obstacles that are preventing it from doing as good a cost-reduction job as it knows how to do — and to take positive steps now to overcome them.

Cost accountants have shown a tremendous amount of initiative in this respect in recent years. From the earlier somewhat limited concept of the accountant as primarily a record-keeper, his job has developed through the addition of new and expanded functions related to the control of the widely dispersed and diversified operations typical of present day business. This does not mean that the chief accounting executive is personally responsible for the control of a company's operations but he does provide the basis for such control through the development and interpretation of control information.

It is for this reason that accountants are no longer content to report **what** has been spent. They want to be able to report **why** it has been spent. They are familiarizing themselves more and more with plant operations in order that they might be able to offer helpful suggestions for cost reduction. It is only natural, therefore, that they should want to have a clear picture of the division of responsibilities in regard to cost control and it is logical that the foreman should be selected for special consideration because there are few jobs in the whole of industry which have increased in complexity and difficulty in the past decade to

the same degree as the jobs of foremen. Therefore we might start by having a look at the man we are going to talk about in order that we may all think in terms of the same individual.

THE FOREMAN

A Works Manager

A foreman should be the "Works Manager" of his own section. To fully appreciate the meaning of this, he should visualize the degree of authority and responsibility vested in a works manager and apply the same conditions to his own position.

A foreman's job covers essentially the same functions as the top executive's job except that the foreman is confined to just one section of the business. The main difference is the amount of territory covered. The same fundamental principles apply to the performance of the foreman's job as apply to the performance of the top executive's job. Both are responsible for men, materials, facilities and plans. Both get their results through the supervision of others. The foreman's job is merely a smaller management job. The top executive manages the business, while the foreman manages a "business within a business".

Most Important Qualities

Since every foreman's job is a management job, the fundamental qualities of a good manager apply to all persons performing a management function. A good manager must be a good leader. He must be able to get men to work together willingly, intelligently, enthusiastically, and cooperatively to reach a common goal.

As works manager of a section he must make decisions on all those things for which he is responsible.

He must be able to get the facts, analyze the facts, draw sound conclusions, make proper decisions, and then get others to carry out his plans. A good manager must be a master of the art of getting people to work with him.

When confronted with a problem, he must be able to get to the root of the trouble to determine all the possible causes and solutions. He should then be able to recommend the most likely solution and take the necessary steps towards its solution. When he is not in a position to carry out the corrective measures himself, he should be able to make the most effective use of the services of the service departments. It is his responsibility to see that he gets value for his money and that the service is there when he wants it.

He must be emotionally stable. This trait differentiates the person who will break down in an emergency situation as compared with someone who rises to, and is at his best, in such situations.

He must carefully plan ahead to be able to constantly analyze for and detect weaknesses and do something about them. (This is in contrast to the foreman who is usually too busy going through the routine affairs of the day to have any time for careful planning ahead or analyzing, in order to keep out of hot water in the future. This man is in the same position in relation to his section as a man who finds himself in a canoe without a paddle on a swift-moving stream. In

other words, the man in the canoe is just going for a ride. He has no real idea where he is or what is around the next corner).

The foreman must have "Control" over every situation at all times. Control is knowing "what ought to be done" and knowing "what is being done".

His superiors should never find it necessary to order him to take specific action on things on which he should have taken action independently.

The Foreman Should Be Promotable

It is to the company's advantage to fill vacancies from the ranks of foremen, if they are promotable, because of their intimate knowledge of the company's products. Being promotable means more than ability to do the job he is being paid to do, it calls for proof, in addition, that he can do the job which he is not paid to do.

To be readily promotable, the foreman must have trained an efficient group of assistants who can carry on in his absence. He has maintained a complete record of important "know how" which he has accumulated on his present job and which can be used effectively by his successor. The non-promotable foreman stands on the ladder of progress, making it difficult, if not impossible, for others who have the ambition to move ahead.

Finally, he is expected to produce a product on schedule, of acceptable quality, at minimum cost, and with good industrial relations.

The Foreman's Cost Responsibilities

Those costs for which the foreman should be responsible may be classified under two principle headings:

(a) Costs related to the productivity of direct labour.

(b) Costs related to the utilization and productivity of indirect labour and control of all supplies necessary to the operation.

Although these two general items of cost can be readily separated for accounting purposes, the foreman's job is complicated by the many close relationships between them. Consequently, all his activities must be directed toward their control and it is through these activities that he can make cost reductions possible.

Direct Labour Costs

Actual time-study and rate setting are, of course, the functions of a separate department. However, it is the foreman's responsibility to see that the established rates are met. For this reason, and because time-study is so closely tied up with the foreman's responsibilities, he should learn all he can about it. Time is the largest single element of cost that comes within the foreman's direct control. A foreman's attack on methods improvement, therefore, will profitably start with a minute study of just how time is used in his department and where it might be used to better advantage.

I believe that it is in his efforts to increase productivity and battle time that the foreman's part in cost-reduction is least understood. I also believe that a clear understanding of this by management is necessary for a cost-reduction program to be successful.

In these activities the foreman is subjected to a four-way squeeze. In one direction he is opposed by labour. In the opposite direction he has the continuing efforts of the Processing and Time-Study groups to whittle away at time standards. In between he faces the limitations of the equipment with which he has been provided and the possible censorship of his superiors if shop cost variance charges tend to increase.

With the proper appreciation of the foreman's plight, by all concerned, and an understanding approach made to the problem of cost reduction, most foremen can be expected to cooperate effectively. When this is not done, the foreman cannot be blamed for taking what he considers to be the path of least resistance by taking a passive if not a belligerent attitude towards all efforts to reduce costs.

Labour has made tremendous financial gains in the past ten years and it doesn't want to lose what it has won. Its leadership, often irresponsible, feeds it with "speed up" and "rate cutting" propaganda, with warnings that management's contract concessions are being taken away by tighter rates.

The foreman, on the front line, is too often left holding the bag when it comes to combatting this propaganda. It is true that he is in the best position to do so but the odds are generally against him because labour's leaders are not required to stick to facts as management is obliged to. Then, too, management's case doesn't lend itself to the stirring phrases so common in Union bulletins.

Management has an important job to do here, to counteract this propaganda for the foreman or to give him more effective support in doing it himself.

It is important to remember that the foreman gets the best results from his employees when he has their confidence. He can have their confidence only when his employees know that they can count on him to see that they get a square deal. But even the most sincere foreman often finds it difficult to combat Union propaganda. Therefore, he must feel that the rest of management fully appreciates his problem and is doing an adequate job to help him.

When this condition exists he should be able to gain the confidence of his employees by sharing the responsibility of seeing that the time-study of the jobs under him are both fair and adequate. He can help assure this by giving the Time-Study Department one hundred per cent cooperation when they are on the job and keeping every man under him properly informed of what is expected of him.

He must know the production expectations which he is expected to meet with the number of men he supervises. Then, he is expected to keep careful check to see that his men are producing to time-study. If they are not, he must take steps to correct the situation, and follow through to see that his instructions are followed out.

That is not to say that the foreman is expected to have his men so frightened of him that they would not dare disobey an instruction. Driving through fear is a technique of management that is obsolete. If rates are not being met he must determine why.

(1) It is possible that the operation is not being performed as it was when the time-study was made.

(2) There may be difficulties with equipment or materials.
(3) There may be stock delivery delays or other delays for which management is responsible.
(4) There may be lost time and other delays for which the operators are responsible.
(5) The operators may require additional training or they may not be suited to that particular class of work.

He must have a thorough knowledge, from day to day, of those factors which contribute to something less than maximum productivity. Moreover, he must be able to get all the facts, weigh the evidence he has collected, decide on a course of action, take the necessary corrective steps and follow through by checking results.

EQUIPMENT

Mention has been made of the foreman's equipment. These are his tools and he should have pride in them just as any good workman will have pride in his trade. This doesn't mean that the company should supply him with all the latest tools and machinery that come on the market. This would be unreasonable and no foreman would expect it. However, there generally comes a time when the foreman sincerely believes a new piece of equipment would help him to do a better job. If, after a more detailed study of the advantages of the new equipment it is found that the savings would not justify its purchase, this should be thoroughly explained to the foreman. Otherwise, he is liable to think that management is not as interested in cost reductions as they have led him to believe. Any foreman will understand the company's refusal to buy new equipment if he is shown the number of years required to amortize the cost or the increased number of units which the sales force would be required to sell to pay for it. Once satisfied, in this way, a good foreman will try with renewed effort to get the most out of his present equipment.

SHOP COST VARIANCE CHARGES

Now we might have a look at a number of items classified as Cost Variance Charges. You are probably more concerned with these charges than any others and the same may be said for the foreman but for a vastly different reason. Variance charges have become a kind of unofficial yardstick for measuring the efficiency of foremen. In some ways this is very unfortunate because a foreman's variance charges may not reflect his true efficiency or inefficiency as I shall explain later. However, because of the complexity of the foreman's job, variance charges are the easiest indicators of performance to interpret. Hence their adoption as an efficiency yardstick.

In so far as the cost phases of a foreman's job are concerned, cost variance charges should be the ideal yardstick to measure his effectiveness. The difficulty lies in the evaluation of the differences in operating conditions under different foremen; conditions which may be inherent to the class of work being done, to conditions for which the foreman cannot be held accountable. Some degree of compensation for these varying conditions can be made in the setting up of the section budgets for the foremen. But even the most carefully

prepared budgets cannot accurately weigh the various factors which contribute to overhead charges in different sections. They certainly cannot allow for unforeseen conditions which the foreman cannot control. Nevertheless, if the foreman knows that a sincere effort has been made to give him a fair budget, and, if he knows that due consideration will be given to unfavourable conditions over which he has no control, he can be expected to put forth every effort to keep his overhead as low as possible.

But I don't want you to go away with the impression that foremen are perfect little angels who merely require the occasional pat on the back to do what should be done, at the proper time, and according to the best procedure. Such is not the case. In fact, the average foreman falls short of the ideal. That is probably why so many superintendents and factory managers have ulcers.

It has been my experience, and the experience of others, that far too much money is literally thrown away every year because of insufficient planning by foremen. Too many foremen boast of their ability to break bottlenecks when they should be learning how to prevent bottlenecks. The foreman, who is rarely faced with a bottleneck in his section, is one who intelligently plans his work in advance and follows the plan.

When a bottleneck occurs, the normal functions of supervision must be set aside to break the bottleneck by any means possible.

SUPERVISION

Supervision, functioning properly, is just as essential to the smooth running of an organization as its machine. When supervision is diverted from its proper functions, expense charges invariably increase. Inadequate or ineffective supervision might be reflected in an increase in rework charges. There may be an increase in scrap, idle time, etc. Machines may not receive the proper care. Machine breakdowns and repairs would be the result. On the other hand, adequate and effective supervision can keep such items at a minimum.

However, it is the foreman's responsibility, as a manager of his section, to exercise good judgment in arriving at the most effective and the most economical balance between these expense items.

Increasing supervision may not be the most economical method to reduce these other expense items. Before recommending an increase the foreman should first determine the effectiveness of the supervision he has. This can best be accomplished by finding out how thoroughly his supervisors have analyzed the reasons for idle time, rework, scrap, etc.; their knowledge of the most effective measures to take and the extent to which they have applied those corrective measures. If his findings have been satisfactory up to this point, he should then investigate the extent of the trouble to determine the amount of assistance required to cope with the situation.

The foreman will frequently find that the supervisor can handle the situation himself, but needed a little check-up. In other cases, the check-up will reveal lack of complete understanding of the problem that can be readily explained.

When there is good indication that the schedule will be substantially increased over a long period of time, additional supervision should be given the necessary training well enough in advance to be prepared for the increased load. On the other hand, when the labour load increases above normal for a limited period, it is not practicable to train new supervisors for such a short period.

A reduction in supervision must be made only after careful consideration of the possible effect on other items of expense. A change in labour load does not necessarily require a like change in supervision. This would be undesirable both from the standpoint of the supervisors and top management. When the plant is operating at a labour load below normal for a limited period, it is generally desirable to retain the regular supervisory staff. When the reduced schedule extends over a prolonged or indefinite period, supervision might have to be reduced.

Much of what has been said of supervision applies to other indirect labour items too, but intelligent planning can reduce these charges to a minimum.

OVERTIME

A foreman who has been holding up another section and delaying deliveries may report that he can catch up on schedule with overtime. He does not always realize that overtime costs extra money. With wages considerably increased and time-and-a-half paid for overtime, there is a financial penalty on the kind of foremanship that results in unnecessary overtime. But, there are other reasons why overtime should be kept at a minimum.

To begin with, work almost invariably suffers both as to quantity and quality during overtime periods. Thus, we get less and pay more for results obtained through overtime.

Frequently, supervision is not so close during these hours, and this may result in waste of material and supplies, spoiled work, broken tools, increased wear and tear on equipment, and decreased output.

Plant services to a section working overtime may be hampered by the fact that most of the service departments are shut down, or are working with a skeleton staff. Of course, emergencies sometimes arise which make overtime work unavoidable. Too often, however, overtime results from lack of foresight and proper planning. Often, it is a lazy way for a foreman to avoid careful thinking and checking in advance.

To control overtime costs effectively, the foreman must:

1. Plan his work as far ahead as possible and follow the plan. He must plan to get his work out in regular working hours, with a little time to spare. He must not plan too closely.
2. He must not make optimistic delivery date promises.
3. He must have a system for checking his material supplies and order in plenty of time.
4. Make sure that he has the necessary equipment and that it is kept in good running order.

5. Have the right number of operators to do the work and make sure that they are properly trained. When he has a tight schedule on a new job, he must remember that additional operators may be required at the start.
6. Train operators to do more than one job so that he can quickly transfer them to meet emergencies.
7. Make sure that work is properly assigned to machines.
8. Make sure that operators are properly placed on jobs and are thoroughly instructed.
9. He must be sure that he thoroughly understands the job instructions and schedule himself, and then,
10. He must be sure his supervisors and operators are clearly informed.
11. Then work must be followed up closely to be sure to catch the first indication of falling behind schedule.

The foreman who habitually looks ahead and checks each job against the possible causes of overtime usually will be able to "weed out" the unnecessary overtime. In reducing overtime to the lowest possible level, the foreman will be eliminating many items of waste wages, waste material, waste effort, lowered efficiency, and loss of customer good-will through poor deliveries.

SQUARE PEGS IN ROUND HOLES

The difference in quality and quantity of work turned out by a person when working at the right and when working at the wrong job is considerable. This difference in quality and quantity represents a definite waste:—

1. Waste of material by spoilage or negligence.
2. Failure to get full production.
3. Rough usage of tools and equipment.
4. Poor quality workmanship.
5. Greater liability to accidents.
6. Loss of group efficiency.
7. Extra time and expense of training.
8. Extra supervision required.

The misplacement of operators could be one of the foreman's sources of waste. In his effort to reduce cost, he would be well advised to make a careful study of each of his operators in relation to the work done to be sure that he has no square pegs in round holes.

IDLE TIME

The productivity of the average worker has vastly increased during the past several decades, not because he is physically more capable, but because he has improved tools and machine power at his command. Consequently, the waste of a man-hour today is a much greater loss than the waste of a man-hour before the war. Therefore, full utilization of every man-hour has become exceedingly important, not only because of the loss of production, but also, because higher wages have made each man-hour costlier today than ever before. The foreman is responsible for a much greater investment in wages, today, than he was even a few years ago.

LOW PRODUCTION EFFICIENCY AND UNEARNED WAGES

Closely associated with idle time is low production efficiency and unearned wages. To control this item, the foreman must first:—

1. Plan the work of his staff so that each operator's time is fully occupied, so that no operator has to wait for another.
2. Have all necessary tools, materials and supplies ready and in good working order when needed.
3. Instruct each operator in the most efficient way to do his or her particular job. Follow up to see that they are doing the work according to the methods laid down.

When these steps have been taken, the foreman can feel confident that the job has been set up correctly and, that if production is lower than expected, he can look elsewhere for the cause. However, to be able to locate the trouble quickly he must:—

4. Check production hourly, or more frequently if necessary, and strive to maintain a uniform output each hour. Twenty units produced one hour, and thirty another hour, may mean one of two things:—
   (a) There was effectively twenty minutes of idle time in the first hour.
   (b) Production in the second hour represented a speed-up which is not conducive to quality work. Higher rejections, rework and scrap can be expected.
5. In the case of group work, find out where the bottleneck is in the line. Make sure that the operations are balanced. Place a reliable pace-setter at the beginning of the line and keep that operator well supplied with material.
6. See that every operator has a full-time job.
7. See that conditions surrounding the job are such that the operator can work at maximum efficiency.
8. Check tools and equipment. Make sure they are properly adjusted and in good repair.
9. Find out if anything has changed the attitude of the operators to cause them to slow down.
10. Check the supervision.
11. When all other conditions are satisfactory, check the job rate.

GOOD HOUSEKEEPING

It might be well, at this point, to say something about Housekeeping, one of the most effective keys to effective foremanship.

Most foremen agree that good housekeeping is desirable but relatively unimportant when compared to the multitude of other production problems demanding their immediate attention. They feel that only a crank would mention housekeeping at such a time. A little consideration, however, will show that time concentrated on housekeeping will automatically clear up a great many of the "more important" problems in less time than would be required if they were considered separately. Let us see what some of these problems are.

1. Idle time resulting from misplaced stock will be eliminated.
2. Hold-ups at subsequent production centres will be correspondingly reduced if not eliminated.
3. Less material will be damaged and have to be replaced if housekeeping is good, and orderly. Idle time and hold-ups resulting from damaged material will be reduced.
4. Material control costs will be reduced by the elimination of unnecessary emergency inventories, searching for missing stock, considerable paper work passing through many hands in several departments for material replacement of stock actually on hand but not located, or for stock damaged through careless housekeeping.
5. The output of all operators will be increased due to elimination of lost time.
6. If the operators are paid on a piece-work incentive basis their earnings will increase. This will result in better morale, fewer grievances, etc.
7. The elimination of hold-ups will improve inter-department relationships.
8. Supervision, previously required for non-productive investigations, can be eliminated or assigned to production efforts.
9. Set-up costs will be reduced and machine utilization increased when unnecessary replacements are eliminated.
10. Overtime will not be required to make up for idle time, hold-ups and replacements.
11. Heavy replacements and delayed schedules frequently require temporary additions to staff resulting in additional training time, further delays, more rejects and scrap, etc., ad infinitum.

Considerably more could be said about the results of poor housekeeping but this should be sufficient to cause any foreman to review the consequences when he is criticized for poor housekeeping in his section.

REJECTS, REWORK AND SCRAP MATERIAL

Reference has already been made to rejects, rework and scrap material. But no discussion of cost control would be complete without a more detailed consideration of these very important cost items. Rejects, rework and scrap material are both the result of, and the cause of practically every other expense charge under the control of the foreman. Hence, a direct approach to the general investigation of expense can frequently be made by determining the reason for rejects, rework and scrap material. Control over these items may then mean control over everything else.

Inadequate and ineffective supervision or inspection, poor set-ups, incomplete training, overtime speed-ups, etc., may in the first instance contribute to increased rejections, rework, and scrap. But rework, and replacements due to scrap, in turn, require supervision and inspection that would be more effective in preventing rework and scrap. When the flow of work has been interrupted, subsequent operations are

delayed. Replacements require additional set-ups which may, in turn, cut into scheduled production of other work.

When we think we have broken the bottleneck, overtime is worked and the pace increased during the day to catch up on lost production. Although this is done at additional cost, still more good money must be thrown after bad because of the new rework, scrap and reduced supervision efficiency that results from the speed-up. Like a snowball rolling downhill, the effect becomes more widespread, with steadily increasing momentum until finally the whole plant is affected. The confusion and inefficiency that result may often be traced back through a chain of events to a condition long since forgotten, which at the time was not considered to be very serious.

CONCLUSION

Although each item in the Code of Accounts may appear to be a separate entity by definition, it should now be clear that, to the foreman whose job it is to control them, many expense items are very intimately related. For effective control he must understand this relationship thoroughly.

Of course, I have not mentioned all the items of expense over which the foreman has some degree of control. He must not think of waste merely as spoiled material or scrap. Waste occurs whenever there is excessive use of time, energy, space, supplies, power, light, heat, tools, or equipment. Poor planning which necessitates overtime work at extra rates of pay is wasteful. But so are accidents which injure workers or destroy material or equipment. Any preventable loss in the process of producing the Company's product is a form of waste, constituting a needless strain upon its resources.

The cost of waste is borne not only by the Company, but like government taxes, in part by customers and employees. The customer pays the waste tax in higher prices or lower value of the product. The employee pays by loss of employment when the cost of waste adds to prices and cuts down Company sales.

Waste control is cost control and it is quite apparent that the foreman has a very important part in cost control and hence cost reduction, because cost must be controlled before they can be reduced.

Internal Control Through System Design

By E. P. PRIEBE, C.P.A.,
Internal Auditor Skelly Oil Company

PLAN OF ORGANIZATION

System design as an aid to internal control should start with the plan of organization. From an organizational standpoint, our accounting department is broken down into functional activities which we call units and any other more minute breakdown is referred to as a section. In no case is a particular unit an accounting department in itself. For example, an invoice is prepared by the billing unit, extensions are checked by the calculating unit, quantities billed are tied-in to daily totals of shipments from the various plants by the calculating unit, quantities are tied-in to monthly totals of shipments from the various plants by the cost section of the general bookkeeping unit, the invoice is posted to the auxiliary ledger by the accounts receivable unit, and the monthly totals of billings are posted to the general ledger by the general bookkeeping unit. Responsibility for the collection of the invoice is vested in the treasury department which is separate and distinct from the accounting department. I will not go into detail describing the functions of each unit but merely state that we have a group of individuals performing specialized tasks for all of the operating departments of the company instead of having a group of individuals performing all of the accounting functions for a particular operating department. Such a plan of organization does not cause a duplication of work nor does it cause unnecessary work. After all, the functions have to be performed and if they are performed by numerous units instead of a single unit, then the plan of organization is such that sufficient internal check is obtained, thus obviating the necessity for a certain amount of internal auditing.

CASH CONTROL

There is nothing unusual in our control of cash but you might be interested in a very brief resume of what we do. All items are vouched for payment by our auditor of disbursements who is the head of the Accounts Payable Unit. The checks are all prenumbered by the printer and we do not have a supply of unnumbered checks to take care of spoilage in the normal routine. The checks are written on a machine which automatically makes two carbon copies of the one-line payee and amount typed on the check. The carbon copies are not single sheets for each payee but instead the payees and amounts are shown one typewriter space apart. The machine is equipped with a register so that the total disbursements at the end of each day are cleared onto the carbon copies. One of the carbon copies is sent to the Treasury Department and the other carbon copy serves as the check register. Any mutilated check must be corrected by a machine entry on the carbon copies and the new check written in the usual manner. When we installed this system, there was considerable opposition to the plan because of the work involved in making a correction. (Heretofore, it was a simple

matter to take an unnumbered check and replace the mutilated one.) However, after the aches and pains of the changeover were passed, we found that there was a steady decline in the number of errors on the checks. In other words, we achieved better internal control and better efficiency in the same move.

The check is signed by the auditor of disbursements and the treasurer with all vouchers attached so that any item may be readily challenged. The check register is passed to the calculating unit for verification of the daily total and then sent directly to the general bookkeeping unit. The reconciliation of the vouchers payable at the end of each month is made by the tabulating unit. All cash received is deposited by the Treasury Department and the general bookkeeping unit makes the distribution from copies of remittance advices accompanying the cash receipts. You will note that our control of cash is designed to follow the plan of organization previously outlined.

ACCOUNTS RECEIVABLE CONTROL

The accounts receivable ledgers are a responsibility of the Accounting Department and the collection of the accounts is a responsibility of the Treasury Department. The actual credit entries resulting from cash receipts are made by the general bookkeeping unit which precludes the possibility of the person receiving the cash making a diversion through control of the entries. The authority to charge off accounts because of non-collectibility rests jointly with the Accounting and Treasury Departments.

MERCHANDISE STOCKS INVENTORY CONTROL

Perpetual inventory records of quantities are maintained and these are checked against the physical facts by cycle inventories. These inventories are taken by the Material Unit which is a part of the Accounting Department. All differences are analyzed and it takes executive approval by the operating departments for any write-off. Summaries in total of these write-offs appear in the regular monthly operating statements.

You will note that I referred to the perpetual inventories in terms of quantites and made no reference whatever to the monetary value. Our theory in this connection is that we will account for all quantities through the point of passing title to an outside party at which time we will make sure that the correct unit price is used in the billing. To us, it is more important to know that we are short one item than it is to know that the inventory was reasonably close in monetary value without any knowledge of whether or not every item was accounted for.

Each year we prepare an account of stocks of all liquid products. This statement was added a few years ago because of the complexity of an integrated company wherein we are producing and purchasing crude oil, blending stocks and finished products. By making such an account of stocks, we are able to satisfy ourselves that all internal movements of stocks are accounted for by the receiving point.

FIXED ASSETS CONTROL

Accountants admit the importance of quantitative control over fixed assets when they insist that the books reflect costs and reserves

separately. They also admit that the valuation problem is not quite as important as merchandise stocks inventory valuation because they say that the books reflect the cost of the fixed assets (without saying that the fixed assets are acutally in the company's possession) and they do not attempt to place them on a current market basis if the market happens to be less than cost. The reasons for such valuations are sound and I do not intend to go into a discussion of that subject. Instead, I would like to go into a certain amount of detail with reference to the subject of quantitative control of fixed assets because I believe that it is a subject of general interest and one that is often overlooked in the field of internal control. It is sometimes overlooked in annual audits, as shown by the McKesson-Robbins case.

First of all, I would like to qualify my remarks to the extent that I would not advocate the adoption of quantitative control of fixed assets by all businesses. If all of the property is fenced in and there are watchmen at all exits, then there is already a control over quantities of fixed assets and I do not want to convey the impression that anything further need be done in such businesses. Conversely, there are many businesses in which some of the properties are widely scattered and you would not hesitate to discharge the office boy for missing postage stamps amounting to a few dollars whereas you are not even checking to see if you might have missing fixed assets costing thousands and perhaps millions of dollars. Consider the fact that in many businesses the fixed assets constitute the largest item on the balance sheet and then you will see why I am concerned about the lack of quantitative control of fixed assets.

How can we achieve quantitative control of fixed assets without unnecessary clerical expense? First of all, we have to set out the definition of that which we intend to control. When we control quantities of current asset inventories, we usually set out the definition as those items which will be included in our quantity sales figures either directly or indirectly. Unfortunately, the definition for fixed assets is not as simple. And yet, if we do not set a definition, we will find ourselves charging items to fixed assets which we cannot possibly control from a physical standpoint. I do not believe that we should charge any items to fixed assets that we cannot control from a quantitative standpoint, with the possible exception of those items which are related to certain quantities and can be retired on a proportionate basis. It is true that any item **CAN** be controlled but sometimes the control can be achieved only with unreasonable clerical expense. Therefore, we must alter the definition so as to include only those items which we **INTEND** to control from a quantitative standpoint. The items will vary in different businesses and it will be quite a task to define the items when you are doing it for the first time. I do not believe that the definition is as simple as once expressed by a reputable firm of public accountants in a letter to the president of the company when they recommended that all minor additions to fixed assets of $150 or less be expensed. I challenged this definition by using an example of a typewriter purchased at $120. The answer to my challenge was that the $150 minimum was probably a little high and perhaps the minimum should be lowered to $100. In other words, if we were to follow such a definition, a break in the price

of typewriters would cause the 10 inch style to be expensed and the 12 inch style to be capitalized. Such a definition is so asinine that I did not challenge any further. Instead, I continued to use a definition which included all items (irrespective of the amount of money involved) which did not incur clerical expense out of proportion with the item to be controlled. As a suggestion, you may have a type of fixed asset that can be expressed in map form. If it is of this type, you can use the map to express your definition. With such a definition, you can control all of those transactions which cause a change in the map and expense all other items. If such maps are maintained under the direction and responsibility of the comptroller or chief accountant, you will find that you will have not only a valuable tool in controlling fixed assets but also highly valuable information for the operating department. Instead of spending days literally digging for information on certain underground lines before proceeding with a change in the lines, the operating department secures its information from the maps and expensive time is saved. With such valuable information for the operating department, you can rest assured that we get their cooperation in informing us of all anticipated changes, particularly partial retirements of fixed assets which usually furnish most of the grief in attempting to control fixed assets. Maps may not be the answer for any part of the problem in your particular business but the fact remains that we should first set out the definition of that which we intend to control.

The next step in quantitative control of fixed assets is to maintain a perpetual inventory of the fixed assets expressed in the same terminology as the definition. Mere voucher references under general headings which group many items are not sufficient. Such property records place the emphasis on the amount of money and not on the quantitative control. Visualize the problem in the same light as your perpetual inventory of merchandise stocks. The form will vary to a certain extent because of relatively few withdrawals but basically, the problem is the same.

The third step in quantitative control of fixed assets is to maintain cycle inventories to check on the accuracy of the property record. As in the case of merchandise stocks, the periodic check of the perpetual inventory is much better than the complete inventory at the close of the fiscal period. Such large scale inventories are usually susceptible to numerous errors because it is a hurry-up job with inexperienced help. If the work is spread out over the entire accounting period, you can develop an experienced inventory crew that will verify the perpetual inventory record. Then, you can rely upon the book inventory of the fixed assets in the same manner as you rely upon the book inventory of the stocks at the close of the accounting period.

The fourth step in quantitative control of fixed assets is to project the differences between actual inventory and book inventory on the books. This involves the same techinque as in the case of merchandise stocks. The in-transit items must be taken into account. It is of tremendous value to proper control if the head of the inventory unit is also a qualified accountant so that there will not be any mis-interpretation

of the results of the inventory. In my opinion, the ideal situation is to have a combination engineer and accountant.

After achieving quantitative control, what about the use of estimated costs? Perhaps the fixed asset was acquired on a turn-key job. If it was, it has to be broken down in the terms by which it is going to be controlled. Estimates are entirely satisfactory and we have no hesitancy whatever in using them to record partial retirements of fixed assets, as far as the amount of money attributable to each item is concerned. As a matter of fact, you may be able to save considerable clerical expense if you will minimize the importance of the money with respect to the control over the physical asset.

ACCOUNTS PAYABLE CONTROL

In general, the duties of the purchasing agent should be to procure the required materials at the required time and at the best price. If there are any purchasing agents who might take offense, I am sorry for making the definition as simple as that, but it is my opinion that the duties should stop at that point instead of the purchasing agent receiving the invoices from the vendor and obtaining the receiving reports from the field. If the purchasing agent will send the Accounting Department's copy of the purchase order to the Accounts Payable Unit of the Accounting Department, the vendor to send the invoices directly to the Accounts Payable Unit, and the field to send the receiving reports directly to the Accounts Payable Unit, then I believe that adequate internal control will be obtained. With such a system, it would take the collusion of the purchasing agent, the man in the field, and the vendor in order to have fraudulent purchases. Without such a system, I doubt if you would relinquish much more internal control if you were to proceed with the next step and let the purchasing agent issue the checks to the vendors.

Of course, at some point in your system it is necessary to trust certain individuals and perhaps one of the most important audits that can be made is an audit of the personnel before they are hired. We hear so much about the scientific methods of aptitude tests to determine the nature of the work and the skill for a particular job. I for one would like to learn more about scientific methods for testing for loyalty and honesty before placing an individual on a particular job. If this is not important, then why did a large mail order house hire an FBI agent as comptroller a few years ago? It seems as though each individual has his own definition of honesty. One person would never take 3c in cash from the petty cash box but the same individual would have no hesitancy to take a 3c stamp from the company to mail a personal letter. Another person would not take 60c in cash from the petty cash drawer but his conscience would not bother him to take a box of lead pencils from the stationery room. What relationship do these remarks bear to the internal control of paying for products and services? Simply this—the purchasing agent must be loyal and honest in accordance with **YOUR** definition and then we should remove as much temptation as possible from his path. The three-way check on purchases is the best method of which I have knowledge, to remove the temptation.

In one company for whom I worked and in which I changed the system to establish the three-way check on purchases, I met with considerable resistance to the change—I believe that is normal to expect. Shortly after the change, a member of the purchasing department called me, wanting to know when certain vendors were going to be paid on certain invoices. I told him to tell the vendor to call me directly, which the vendor never did. I became suspicious and decided to run a little test check on the particular vendors which the purchasing department mentioned, the check consisting of deliberately delaying the payments to these vendors to see what would happen. The vendors never called or wrote concerning the delay but the member of the purchasing department called and of course, I gave him the same instructions to have the vendors call me. What we uncovered was the fact that the member of the purchasing department made a deal with the vendors for a personal commission but the vendor agreed to pay the member of the purchasing department only when he received payment for the invoices. The purchasing department's interest in the rapid processing of certain invoices was prompted by his desire to get his personal commission as soon as possible.

The above outlined procedure will not take care of all purchases for companies having a scattered operation. In the daily routine of getting the job done in the field, it becomes necessary to make emergency purchases. Often times, the practice is for the employee to get the materials, secure the invoice from the vendor and then make a confirming requisition, from which the purchasing department prepares a confirming purchase order. I may be wrong but I believe that the confirming requisitions and confirming purchase orders are a waste of time and money and do not add to the internal control. As a matter of fact, such a system has little, if any, internal control. In our company, we take a different approach in our system design by analyzing the nature of these transactions and then establishing a practical system of control at minimum expense. First of all, let us look at the facts in terms of our desired three way check on purchases. In this instance, the purchasing function has been delegated to the person receiving the material. If such a procedure is necessary to operate properly in the field, then we cannot deny that such a delegation has occured. That means that two points of the three way check have been combined in order to operate efficiently. However, the delegation of the third point of the three way check, namely that of the independent check of the vendor's invoice, should not be delegated to the field. Otherwise, the same line of reasoning could be used as in the case of the purchasing department matching invoices, receiving reports and purchase orders. You might just as well delegate the responsibility for writing the checks to the field representative making the purchase. We have issued the following instructions to all vendors from whom we are making emergency purchases in the field:

1. Furnish two copies of the delivery ticket to the individual receiving the materials.
2. Send invoices covering such deliveries directly to the Accounts Payable Unit.

Our theory in the above procedure is this—the purchase order is verbal and nothing is added by insisting that our representative reduce it to writing when the vendor has to do the same thing when he prepares the delivery ticket. Therefore, we construe a copy of the delivery ticket signed by our representative and forwarded by him to the Accounts Payable Unit as a purchase order. Inasmuch as this agrees with the facts, I do not believe that a rewriting of the delivery ticket by our representative in the form of a confirming requisition adds anything. However, if you are reluctant to eliminate both the confirming requisition and the confirming purchase order, you might take one step at a time and eliminate the confirming purchase order. Then the independent demand for payment directly from the office of the vendor to the Accounts Payable Unit in the form of an invoice makes it possible for us to have a two way check on purchases. We have met with a certain amount of objection to this procedure particularly in insisting that the invoices be sent directly to the Accounting Department and not to the field representative. Frankly, I believe the objection is due to the fact that the purchase has been made without regard to price and the field representative wants the invoice to know what price he shoud place on the copy of the delivery ticket. The ascertainment of the price to be placed on the delivery ticket is not sufficient reason to give up the two way check between the office of the vendor and the approved delivery ticket, checked by an independent third party in the form of the Accounts Payable Unit. This method of procuring materials in the field carries some risks but in any business, you have to assume some risks but that doesn't mean that we cannot close the door to the possibility of a field representative making emergency purchases over an extended period of time without our knowledge.

CONCLUSION

The foregoing discussion did not attempt to complete the entire picture of our internal control through system design because time would not permit such a lengthy dissertation. However, I have attempted to give a few examples of the way that we achieve internal control through system design with the thought in mind of illustrating the pattern we are following.

was overlooked in a number of cases indicating a failure to understand the interrelationship between the three items, namely the cash transaction re dining room supplies and light, heat and water, the balance sheet item of accounts payable and the items appearing on the revenue and expenditure statement re dining room wages and repairs.

Minor errors existed involving statement headings, form of statement, mechanical errors omission of offsetting items, which are common to questions of this type.

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Costs, What They Can Do for Us	Oct. 1947
Cost Accounting Problems	June-July 1944
Cost Accounting, the General Scope of	Oct. 1929
Cost Accounting, Relation of — to Business Management	Dec. 1930
Cost Accounting and Control in To-morrow's Competitive Economy	Apr. 1945
Cost Accounting, Efficiency of	Aug. 1938
Cost Accounting for Spruce Lumber Manufacturers	Oct. 1941

separately. They also admit that the valuation problem is not quite as important as merchandise stocks inventory valuation because they say that the books reflect the cost of the fixed assets (without saying that the fixed assets are acutally in the company's possession) and they do not attempt to place them on a current market basis if the market happens to be less than cost. The reasons for such valuations are sound and I do not intend to go into a discussion of that subject. Instead, I would like to go into a certain amount of detail with reference to the subject of quantitative control of fixed assets because I believe that it is a subject of general interest and one that is often overlooked in the field of internal control. It is sometimes overlooked in annual audits, as shown by the McKesson-Robbins case.

First of all, I would like to qualify my remarks to the extent that I would not advocate the adoption of quantitative control of fixed assets by all businesses. If all of the property is fenced in and there are watchmen at all exits, then there is already a control over quantities of fixed assets and I do not want to convey the impression that anything further need be done in such businesses. Conversely, there are many businesses in which some of the properties are widely scattered and you would not hesitate to discharge the office boy for missing postage stamps amounting to a few dollars whereas you are not even checking to see if you might have missing fixed assets costing thousands and perhaps millions of dollars. Consider the fact that in many businesses the fixed assets constitute the largest item on the balance sheet and then you will see why I am concerned about the lack of quantitative control of fixed assets.

How can we achieve quantitative control of fixed assets without unnecessary clerical expense? First of all, we have to set out the definition of that which we intend to control. When we control quantities of current asset inventories, we usually set out the definition as those items which will be included in our quantity sales figures either directly or indirectly. Unfortunately, the definition for fixed assets is not as simple. And yet, if we do not set a definition, we will find ourselves charging items to fixed assets which we cannot possibly control from a physical standpoint. I do not believe that we should charge any items to fixed assets that we cannot control from a quantitative standpoint, with the possible exception of those items which are related to certain quantities and can be retired on a proportionate basis. It is true that any item **CAN** be controlled but sometimes the control can be achieved only with unreasonable clerical expense. Therefore, we must alter the definition so as to include only those items which we **INTEND** to control from a quantitative standpoint. The items will vary in different businesses and it will be quite a task to define the items when you are doing it for the first time. I do not believe that the definition is as simple as once expressed by a reputable firm of public accountants in a letter to the president of the company when they recommended that all minor additions to fixed assets of $150 or less be expensed. I challenged this definition by using an example of a typewriter purchased at $120. The answer to my challenge was that the $150 minimum was probably a little high and perhaps the minimum should be lowered to $100. In other words, if we were to follow such a definition, a break in the price

of typewriters would cause the 10 inch style to be expensed and the 12 inch style to be capitalized. Such a definition is so asinine that I did not challenge any further. Instead, I continued to use a definition which included all items (irrespective of the amount of money involved) which did not incur clerical expense out of proportion with the item to be controlled. As a suggestion, you may have a type of fixed asset that can be expressed in map form. If it is of this type, you can use the map to express your definition. With such a definition, you can control all of those transactions which cause a change in the map and expense all other items. If such maps are maintained under the direction and responsibility of the comptroller or chief accountant, you will find that you will have not only a valuable tool in controlling fixed assets but also highly valuable information for the operating department. Instead of spending days literally digging for information on certain underground lines before proceeding with a change in the lines, the operating department secures its information from the maps and expensive time is saved. With such valuable information for the operating department, you can rest assured that we get their cooperation in informing us of all anticipated changes, particularly partial retirements of fixed assets which usually furnish most of the grief in attempting to control fixed assets. Maps may not be the answer for any part of the problem in your particular business but the fact remains that we should first set out the definition of that which we intend to control.

The next step in quantitative control of fixed assets is to maintain a perpetual inventory of the fixed assets expressed in the same terminology as the definition. Mere voucher references under general headings which group many items are not sufficient. Such property records place the emphasis on the amount of money and not on the quantitative control. Visualize the problem in the same light as your perpetual inventory of merchandise stocks. The form will vary to a certain extent because of relatively few withdrawals but basically, the problem is the same.

The third step in quantitative control of fixed assets is to maintain cycle inventories to check on the accuracy of the property record. As in the case of merchandise stocks, the periodic check of the perpetual inventory is much better than the complete inventory at the close of the fiscal period. Such large scale inventories are usually susceptible to numerous errors because it is a hurry-up job with inexperienced help. If the work is spread out over the entire accounting period, you can develop an experienced inventory crew that will verify the perpetual inventory record. Then, you can rely upon the book inventory of the fixed assets in the same manner as you rely upon the book inventory of the stocks at the close of the accounting period.

The fourth step in quantitative control of fixed assets is to project the differences between actual inventory and book inventory on the books. This involves the same techinque as in the case of merchandise stocks. The in-transit items must be taken into account. It is of tremendous value to proper control if the head of the inventory unit is also a qualified accountant so that there will not be any mis-interpretation

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CONCLUSION

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« STUDENT SECTION »

Comments by A. V. HARRIS, C.A.

FUNDAMENTALS OF COST ACCOUNTING

Question 5. (25 marks).

Using whatever information is necessary from the data below, prepare a statement showing the per pound cost of manufacture.

On January 1, a small manufacturing company had an inventory consisting of finished product amounting to 5,000 pounds. On December 31, the finished product on hand amounted to 8,000 pounds.

During the year, the finished product sold amounted to 20,000 pounds.

The following detailed information is taken from the books of the Company for the year ended 31st December:

Advertising	$ 350.00
Bad debts	265.00
Delivery equipment maintenance	700.00
Depreciation of:	
Buildings, Machinery, Tools, Equipment	500.00
Delivery Equipment	200.00
Office Furniture	105.00
Direct Labour	4,000.00
Freight Outward	190.00
Heat, Light, Power	700.00
Indirect Labour	1,000.00
Insurance	600.00
Materials	3,300.00
Miscellaneous:	
General Expense	1,400.00
Selling Expense	1,900.00
Shop Expense	150.00
Office Salaries	1,200.00
Officers' Salaries	1,500.00
Repairs to Plant and Equipment	300.00
Royalties for the year (on Machinery)	788.00
Sales Salaries	2,500.00
Sales Travel Expense	900.00
Factory Supplies Used	600.00
Stationery and Printing (General Office)	80.00
Taxes (Plant)	850.00

Solution to Question 5:

Computation of unit cost of manufacture:	
Inventory December 31	8,000 lbs.
Product finished and sold	20,000 lbs.
Total to be accounted for	28,000 lbs.
Less Inventory January 1	5,000 lbs.
Product manufactured during year	23,000 lbs.
Cost to Manufacture:	
Depreciation Buildings, Machinery, Tools, etc.	$ 500.00
Direct Labour	4,000.00
Heat, Light and Power	700.00
Indirect Labour	1,000.00
Insurance	600.00
Materials	3,300.00
Shop Expense	150.00
Repairs to Plant and Equipment	300.00
Royalties on Machinery	788.00
Factory Supplies Used	600.00
Taxes	850.00
	$12,788.00

Cost per pound to manufacture:
$12,788.00 — 23,000 lbs. = 55.6c.

GENERAL ACCOUNTING COMMENTS
by T. D. V. CAMPBELL, C.A., R.I.A.

ACCOUNTING I

Question 1 (30 marks)

You are the treasurer of the City Luncheon Club and it is necessary that you prepare the following statements for the year ended December 31, 1948. The club purchased its own premises and commenced operations as of January 1, 1948.

Required:

(a) Statement of receipts and disbursements.
(b) Statement of revenue and expenditure.
(c) Balance sheet as of December 31.

Information available:

(a) **Membership dues** received during year $16,000; unpaid December 31, $500, of which 50% are definitely known to be uncollectable.
(b) **Dining room receipts,** $32,000.
(c) **Disbursements:**
Secretary's salary, $3,500.
Dining Room Wages and Supplies, $40,000.
Insurance and Taxes, $3,500.

Mortgage principal (paid on June 30), $6,000.
Mortgage interest, $1,020.
Light, Heat, Water and Repairs, $4,200.
Bank Balance as of December 31 was $2,500.

(d) The building was purchased on January 1 for $20,000 (of which $5,000 was cost of land) and is estimated to depreciate at 2% per annum.
Equipment was purchased on January 1 at a cost of $5,800 and is to be depreciated at 10% per annum.
The mortgage was taken for $20,000 with interest at 6% per annum payable on June 30 and December 31.

(e) Accounts payable as of December 31 amounted to $400 and represented provisions and supplies for the dining room $350, and a coal bill of $50. There were no inventories on hand.

(f) The funds for the assets acquired as of January 1 (including the opening bank balance) had been raised as follows:
$20,000 by mortgage (see (d) above) and the remainder by capital contributions of the members which is to be credited to the proprietorship account.

(a)

CITY LUNCHEON CLUB

Statement of Receipts and Disbursements for year ended 31st December 1948

Receipts		
Proceeds from capital contributions	$ 18,520	
Mortgage loan	20,000	
Membership dues	16,000	
Dining room receipts	32,000	
		$ 86,520
Disbursements		
Purchase of real estate	$ 20,000	
Purchase of equipment	5,800	
Secretary's honorarium	3,500	
Dining room wages and supplies	40,000	
Insurance and taxes	3,500	
Mortgage principal-reduction	6,000	
Mortgage interest	1,020	
Light, heat, water and repairs	4,200	
		$ 84,020
Bank balance at 31st December 1948		$ 2,500

(b)

CITY LUNCHEON CLUB

Statement of Revenue and Expenditure for the year ended 31st December 1948

Revenue		
Membership dues	$ 16,500	
Dining room revenues	32,000	
		$ 48,500
Less		
Operating expenses:		
Secretary's honorarium	$ 3,500	
Dining room wages and supplies	40,350	

Insurance and taxes		3,500	
Light, heat, water and repairs		4,200	
Mortgage interest		1,020	
Estimated depreciation — buildings		300	
— equipment		580	
Estimated loss by bad debts		250	
			$ 53,720
Net loss for year			$ 5,250

(c)

CITY LUNCHEON CLUB

Balance Sheet
as at 31st December 1948

Assets

Current			
Bank		$ 2,500	
Members dues receivable	$ 500		
Less reserve bad debts	250	250	
			$ 2,750
Fixed			
Land—cost		$ 5,000	
Buildings cost	$ 15,000		
Less reserve depreciation	300		
		$ 14,700	
Equipment—cost	$ 5,800		
Less reserve depreciation	580	5,220	
			$ 24,920
			$ 27,670

Equities

Current liabilities			
Accounts payable			$ 400
Long-term liability			
6% mortgage payable			14,000
Proprietorship			
Capital Contributions 1st January 1948	$ 18,520		
Less Net Loss for year	5,250		
			13,270
			$ 27,670

Comments

The primary errors which arose in the solutions submitted for Question I arose from a lack of understanding as to what was required in the question which in turn arose from lack of a knowledge of the meaning of the terms receipts and disbursements and revenue and expenditure and the fundamental difference between the two statements.

The required determination of the proceeds from capital contributions by deduction caused the majority of students a great deal of trouble indicating a failure to realize the significance of the data given including the balance in bank at the close of the year period and that considering all other receipts and disbursements the amount required to give the closing bank balance must be the capital contributions.

The required adjustment of the disbursement re dining room wages and supplies $40,000 and light, heat, water and repairs $4,200 covering the accounts payable in arriving at the expenditure for these two items

was overlooked in a number of cases indicating a failure to understand the interrelationship between the three items, namely the cash transaction re dining room supplies and light, heat and water, the balance sheet item of accounts payable and the items appearing on the revenue and expenditure statement re dining room wages and repairs.

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